42.(NEW) The method according to claim 27 whereby said circular primer hybridizes at its 5' end to said target nucleic acid and at its 3' end to said target nucleic acid wherein said 3' end is not immediately adjacent to said 5' end, forming said first hybridization complex, whereby said method further comprises prior to step b), contacting said hybridization complex with a polymerase such that the 3' end of said circular primer is extended such that it is immediately adjacent to said 5' end.

A1 cont.

sub B5 cont.

REMARKS

Support for new claims 27- 42 can be found in the specification at pages 21-26. An appendix of the pending claims is attached herein for the Examiner's convenience.

Applicants submit that the claims are now in condition for allowance and early notification to that effect is respectfully requested. If the Examiner feels there are further unresolved issues, the Examiner is respectfully requested to phone the undersigned at (415) 781-1989.

Respectfully submitted,

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PENDING CLAIMS

27. A method of detecting an amplification reaction comprising:

(a) hybridizing a circular primer to a target nucleic acid to form a hybridization complex;

(b) contacting said hybridization complex with a first enzyme that causes modification of said circular primer to form a circularized probe;

(c) contacting said circularized probe with a first amplification primer and a second enzyme whereby a concatamer amplicon is formed;

(d) cleaving said concatamer amplicon forming amplicon cleavage products;

(e) contacting said amplicon cleavage products with an array comprising:

(i) a substrate with a surface comprising discrete sites; and

(ii) a population of microspheres comprising at least a first subpopulation comprising a first capture probe; wherein said microspheres are randomly distributed on said surface; and

(f) detecting said cleavage products.

28. The method according to claim 27, whereby said circular primer:

hybridizes at its 5' end to said target sequence and at its 3' end immediately adjacent to said 5' end to form said first hybridization complex; whereby said first enzyme is a ligase and said 5' end and said 3' end are ligated forming said circular probe.

29. The method according to claim 27, wherein the 3' terminal nucleotide of said circular primer is complementary to a first detection position of said target nucleic acid.

30. The method according to claim 28, wherein said second enzyme is a polymerase.

31. The method according to claim 27, wherein c) further comprises providing labeled nucleotides whereby said concatamer amplicon is labeled.

32. The method according to Claim 27, wherein d) comprises contacting said concatamer amplicon with a third enzyme wherein said third enzyme is a restriction endonuclease forming said cleavage products.

33. The method according to claim 27, wherein said discrete sites are wells.

34. The method according to claim 27, wherein said substrate is a fiber optic bundle.

35. The method according to claim 27, wherein said substrate is selected from the group consisting of glass and plastic.

36. The method according to claim 27, wherein said population of microspheres is randomly distributed in said wells.

37. The method according to claim 27, wherein said circular probe further comprises an adapter sequence.

38. The method according to claim 27, wherein said circular probe further comprises a restriction cleavage site.

39. The method according to claim 27, wherein said circular primer comprises:

a) a first target specific portion;

b) a second target specific portion;

c) an amplification priming site;

d) an adapter sequence; and

e) a restriction site.

40. The method according to claim 39, wherein said adapter sequence is substantially complementary to said capture probe.

41. The method according to claim 39, wherein said first target specific portion is at the 5' terminus of said circular primer and said second target specific portion is at the 3' terminus of said circular primer.

42. The method according to claim 27 whereby said circular primer hybridizes at its 5' end to said target nucleic acid and at its 3' end to said target nucleic acid wherein said 3' end is not immediately adjacent to said 5' end, forming said first hybridization complex, whereby said method further comprises prior to step b), contacting said hybridization complex with a polymerase such that the 3' end of said circular primer is extended such that it is immediately adjacent to said 5' end.